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				Filing Date		January 24, 2001																																											
				First Named Inventor		Scott A. Moskowitz																																											
				Examiner Name		W. Luther																																											
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<p>1. <input type="checkbox"/> The Commissioner is hereby authorized to charge indicated fees and credit any over payments to Deposit Account No. 50-1640 in the name of Brobeck, Phleger & Harrison LLP.</p> <p style="text-align: center; font-size: 24px; font-weight: bold;">RECEIVED</p> <p style="text-align: center; font-size: 18px;">JAN 26 2001</p> <p style="text-align: center; font-weight: bold;">OFFICE OF PETITIONS</p>						<p>3. ADDITIONAL FEES</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Fee Description</th> <th style="text-align: right;">Fee Paid</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> Surcharge - late filing fee or oath</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Surcharge - late provisional filing fee or cover sheet</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> _____ Month Extension of Time</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Notice of Appeal</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Filing Brief in Support of Appeal</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Request for Oral Hearing</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Utility Issue Fee (or reissue)</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Design Issue Fee</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Plant Issue Fee</td><td style="text-align: right;">\$</td></tr> <tr><td><input checked="" type="checkbox"/> Petitions to Commissioner</td><td style="text-align: right;">\$ 130.00</td></tr> <tr><td><input type="checkbox"/> Petition to Revive (unavoidable)</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Petition to Revive (unintentional)</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Petitions Related to Provisional Applications</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Submission of Information Disclosure Statement</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Filing Submission After Final Rejection</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Recording Each Patent Assignment Per Property</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Filing Request for Reexamination</td><td style="text-align: right;">\$</td></tr> <tr><td><input type="checkbox"/> Other (specify) _____</td><td style="text-align: right;">\$</td></tr> </tbody> </table>						Fee Description	Fee Paid	<input type="checkbox"/> Surcharge - late filing fee or oath	\$	<input type="checkbox"/> Surcharge - late provisional filing fee or cover sheet	\$	<input type="checkbox"/> _____ Month Extension of Time	\$	<input type="checkbox"/> Notice of Appeal	\$	<input type="checkbox"/> Filing Brief in Support of Appeal	\$	<input type="checkbox"/> Request for Oral Hearing	\$	<input type="checkbox"/> Utility Issue Fee (or reissue)	\$	<input type="checkbox"/> Design Issue Fee	\$	<input type="checkbox"/> Plant Issue Fee	\$	<input checked="" type="checkbox"/> Petitions to Commissioner	\$ 130.00	<input type="checkbox"/> Petition to Revive (unavoidable)	\$	<input type="checkbox"/> Petition to Revive (unintentional)	\$	<input type="checkbox"/> Petitions Related to Provisional Applications	\$	<input type="checkbox"/> Submission of Information Disclosure Statement	\$	<input type="checkbox"/> Filing Submission After Final Rejection	\$	<input type="checkbox"/> Recording Each Patent Assignment Per Property	\$	<input type="checkbox"/> Filing Request for Reexamination	\$	<input type="checkbox"/> Other (specify) _____	\$
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Typed or Printed Name		Floyd B. Chapman						Registration No.		40,555																																							
Signature		<i>Floyd B. Chapman</i>						Date		January 24, 2001																																							

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application Of:

Scott A. MOSKOWITZ

Application Number: 08/674,726

Filed: July 2, 1996

For: EXCHANGE MECHANISMS FOR
DIGITAL INFORMATION
PACKAGES WITH BANDWIDTH,
SECURITIZATION,
MULTICHANNEL DIGITAL
WATERMARKS



Group Art Unit: 2731

Examiner: LUTHER, W.

RECEIVED

JAN 26 2001

OFFICE OF PETITIONS

**PETITION UNDER 37 C.F.R. § 1.181 TO EXPUNGE EXAMINER'S COMMENTS
FROM FILE**

Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicant hereby respectfully requests that certain incorrect, disparaging, and prejudicial remarks be expunged from the filewrapper of United States Patent Application Serial Number 08/674,726 (the "Application").

In an Office Action, mailed June 6, 2000 ("Paper 21") from the United States Patent and Trademark Office (the "PTO"), Examiner William Luther entered certain unsolicited, personal comments into the record, beginning with the words "[f]or example, the pending claims appear to be directed toward so called 'method of doing business subject matter'. . . ." See Paper 21, Page 2, Line 5 - Page 3, Line 9 (the "Personal Comments.").¹ Applicant submits that because

¹ In anticipation of the fact that the Personal Comments will be expunged, Applicant has not reproduced the Personal Comments herein. Applicant will identify the Personal Comments by Page and Line number.

the Personal Comments are incorrect, disparaging to the PTO, and prejudicial to Applicant, they must be expunged from the filewrapper of the Application.

1. The Personal Comments Are Contrary To The PTO's Official Policy With Regard To "Business Method Patents"

The Personal Comments include statements that conflict with Official PTO policy. The PTO has long recognized that methods of doing business is a patentable subject matter:

Automated financial/management business data processing method patents cannot trace their origins back to the founding of our nation. However, contrary to popular view, they did not suddenly spring into being in the late 1990's. On January 8, 1889, the era of automated financial/management business data processing method patents was born.

"A USPTO White Paper - Automated Financial Or Management Data Processing Methods (Business Methods)" (the "White Paper") ver. 1.43 at 3 (emphasis added)²; see also State Street Bank & Trust v. Signature Financial Group, Inc., 149 F.3d 1368, 1375 (Fed. Cir. 1998), cert. denied, 525 U.S. 1093, 119 S. Ct. 851 (1999) ("Since the 1952 Patent Act, business methods have been, and should have been, subject to the same legal requirements for patentability as applied to any other process or method."). Thus, the Personal Comments clearly misstate the long-standing PTO policy. Because the Personal Comments contain factual inaccuracies, Applicant respectfully requests that the Personal Comments be stricken from the record.

2. The Personal Comments Are Disparaging to the PTO

By statute, every claim of a patent is presumed to be valid. See 35 U.S.C. § 282 ("A patent shall be presumed valid."). The Personal Comments include statements that seem to question the PTO's capability to fulfil its statutory duty, and suggest that the PTO routinely fails in fulfilling this duty. See Paper 21, Page 2, Lines 11-15; Page 3, Lines 3-5. Thus, the Personal Comments portray the PTO, and the patents that it issues, in a negative light. Because of this, Applicant respectfully requests that the Personal Comments be stricken from the record.

3. The Personal Comments are Highly Prejudicial to Applicant and Should be Expunged

The MPEP directs PTO employees not to express “any opinion as to the validity or invalidity of, or the patentability or unpatentability of any claim in any U.S. patent.” MPEP 1701. A fair extension of this directive would include not expressing an opinion as to the validity of patents directed to a particular subject matter. This, however, is exactly what Examiner Luther has done, and the Personal Comments cast a dark shadow over any patent that issues from the Application.

As discussed above, all patents that are issued by the PTO are presumed valid, and examiners are presumed to performed proper examinations. See 35 U.S.C. § 282; Intervet Am., Inc. v. KeeVet Labs., Inc., 887 F.2d 1050, 1054, 12 USPQ2d 1474, 1477 (Fed. Cir. 1989) (“The presumption of validity under 35 U.S.C. § 282 carries with it a presumption the examiner did his duty and knew what claims he was allowing.”). Because Applicant has requested, and has paid for, a proper examination, Applicant is entitled to the benefit of the presumption that the resulting patent is valid and that any resulting patent has been properly examined. The Personal Comments, however, severely undermine these long-standing presumptions. See Paper 21, Page 2, Lines 11-15; Page 3, Lines 3-5. Further, the inclusion of the Personal Comments in the filewrapper unduly prejudices Applicant. Therefore, Applicant respectfully requests that these comments be expunged from the filewrapper of the Application.

4. Examiner Luther’s Remarks are Not Pertinent to the Prosecution of the Present Application

The MPEP states that “[o]bjections to the disclosure, explanation of references cited but not applied, indication of allowable subject matter, requirements (including requirements for restriction if applicable) and any other pertinent comments may be included [in the Office Action].” MPEP 707 (emphasis added). Applicant submits that Examiner Luther’s comments are irrelevant to the Application.

As discussed above, the Personal Comments misstate long-standing PTO policy, are disparaging to the PTO, and are highly prejudicial to Applicant. In light of this, it would be improper to consider the Personal Comments to be an official PTO communication. Because

² A copy of the White Paper is included as Exhibit A.

these comments do not comply with MPEP 707, Applicant respectfully requests that these comments be expunged from the record.

CONCLUSION

In view of the foregoing, Applicant respectfully requests that this petition be granted.

Respectfully submitted,

BROBECK, PHLEGER & HARRISON, LLP

Dated: January 24, 2001

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By: 
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Registration No. 40,555

A

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A USPTO WHITE PAPER

AUTOMATED FINANCIAL OR MANAGEMENT DATA PROCESSING METHODS (BUSINESS METHODS)

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EXECUTIVE SUMMARY

Recently there has been a marked increase in public attention to the operations of the United States Patent and Trademark Office (USPTO), and specifically, the workgroup responsible for examining patent applications in automated business data processing technologies, Class 705. On March 29, 2000, the USPTO announced a plan to improve the quality of the examination process in technologies related to electronic commerce and business methods. This white paper discusses the patent history of business data processing, the transition this technology is beginning, and the initiatives the USPTO is engaged in to keep pace with this transition and to improve quality in the examination of this technology.

Origin and Evolution – Business data processing has followed an unbroken evolutionary path from mechanical technology up to today's software controlled microprocessors. Automated business data processing itself dates back over a hundred years. The business method claim format has been used in various forms throughout that period. The increase in its use today is an inevitable end result of our progress over the last century.

Class 705 (Modern Business Data Processing) – This class contains numerous small groupings and four major groupings directed to specific and general business data processing machines and methods. These machines and methods still heavily reflect the electrical and computer engineering that underlay them. Class 705 saw about 1% of the total patent applications filed at the USPTO in FY 1999. Its 2658 applications did not even place it among the top five Communications and Information Processing technologies.

Resources In Transition – In 1998, the State Street decision triggered an awareness of the "business method claim" as a viable form of patent protection. We are at the beginning of a change in the approach to how inventors choose to describe their inventions. This change is in turn driving a shift in the required examiner knowledge base for the examination of Class 705 inventions. As it has for over a century, the USPTO is responding appropriately and is adapting its knowledge base as the needs of business patent examination evolve.

Improving Quality – It is universally agreed that high quality examination by USPTO Patent Examiners must be ensured. Quality initiatives are continuously updated. This white paper highlights initiatives in place prior to March 2000, as well as, quality initiatives announced in March by Q. Todd Dickinson, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office.

Customer Partnerships – These are important to improving quality as the USPTO gauges the future needs of Class 705. Customers will know first the future evolution of business data processing technology. Customers' application filings will control the transition of patent application format towards the "business method form" and any future shift that will be required in the knowledge base of Class 705 examiners. They are also in a unique position to assist in providing training needed as part of adapting the knowledge base.

I. INTRODUCTION

On September 23, 1975, Ivan E. Sutherland of the Rand Corporation received the 1975 Award for Outstanding Accomplishment of the Systems, Man, and Cybernetics Society. In his acceptance address entitled “Computerized Commerce”¹, Mr. Sutherland states “What we should be building is a system of computerized commerce: a “smart” communications network which can remember, process, forward, remind and schedule as well as merely communicating”. Mr. Sutherland continues “Computers will become the repositories of manufacturing know-how. Parts lists, purchasing specifications, lists of qualified vendors, design information, fabrication directions, and production history will all be stored in computers. Individuals will be free to take on new tasks more easily than ever before, because the instructions required for those tasks will be available through a variety of on-line computer terminals”.

In the mid-1990s, Mr. Sutherland’s proposed “smart” communication network, now called “Electronic Commerce” or “e-commerce” began finding its niche in the business world. In recent years, the growth of the business technologies, especially the electronic commerce business industry has been phenomenal. This growth has resulted in an increase of business technology patent application filings. Concomitant with this increase in filings there has been a marked increase in public attention to the operations of Workgroup 2760 of the United States Patent and Trademark Office (USPTO) currently responsible for examining patent applications in business related data processing methods and technologies, Class 705.

One prominent portion of business method patents is the area of “Automated Financial/Management Business Data Processing Method Patents.” Such automated business methods are found in U.S. Patent Class 705.

¹ “Computerized Commerce”; Ivan E. Sutherland; September 1975. Acceptance address for the 1975 Award for Outstanding Accomplishment of the Systems, Man, Cybernetics Society, San Francisco, California, September 23, 1975.

II. ORIGINS OF FINANCIAL/MANAGEMENT BUSINESS PATENTS - PRODUCT, APPARATUS AND METHOD

The creation of a patent system was one of the acts performed by the First Congress of the United States. The first patent statute was passed on April 5, 1790, by the Congress of the twelve United States and signed into law on April 10 by President Washington. Rhode Island ratified the Constitution and joined the Union 49 days later on May 29, 1790. The “Commissioners for the Promotion of the Useful Arts” granted the first United States patent on July 31, 1790. The Commission consisted of Secretary of State Thomas Jefferson, Secretary of War Henry Knox, and Attorney General Edmund Randolph. This first patent was to a chemical method for making potash and pearl ash.²

Financial apparatus and method patents date back to this period. These early financial patents were largely paper-related products and methods. The first financial patent was granted on March 19, 1799, to Jacob Perkins of Massachusetts for an invention for “Detecting Counterfeit Notes.” All details of Mr. Perkins invention, which we presume was a device or process in the printing art, were lost in the great Patent Office fire of 1836. We only know of its existence from other sources. Mr. Perkins was perhaps our young nation’s most prolific early inventor with nearly 1% of all patents from our first quarter century. Upon his death in 1849, his obituary filled three pages of the Commissioner of Patents annual report to Congress.³ The first financial patent for which any detailed written description survives was to a printing method entitled “A Mode of Preventing Counterfeiting” granted to John Kneass on April 28, 1815. The first fifty years of the U.S. Patent Office saw the granting of forty-one financial patents in the arts of bank notes (2 patents), bills of credit (1), bills of exchange (1), check blanks (4); detecting and preventing counterfeiting (10), coin counting (1), interest calculation tables (5), and lotteries (17).⁴ Financial patents in the paper-based technologies have been granted continuously for over two-hundred years. See Appendix A for sample Patents.

² Kenneth W. Dobyns, *The Patent Office Pony: A History of the Early Patent Office, Sergeant Kirkland’s Museum and Historical Society* (1994).

³ “One of the most important of his inventions was in the engraving of bank bills. [Fifty] years ago counterfeiting was carried on with an audacity and a success which would seem incredible at the present time. The ease with which the clumsy engravings of the bank bills of the day were imitated, was a temptation to every knave who could scratch copper; and counterfeits flooded the country, to the serious detriment of trade. Perkins invented the stereotype check-plate, which no art of counterfeiting could match; and a security was thus given to bank paper which it had never known.”;

The Patent Office, *Report of the Commissioner of Patents for the Year 1849, Part I. Arts and Manufactures* (1850).

⁴ Edmund Burke Commissioner of Patents, *List of Patents for Inventions and Designs, Issued by the United States from 1790 to 1847* (1847).

Automated financial/management business data processing method patents cannot trace their origins back to the founding of our nation. However, contrary to popular view, they did not suddenly spring into being in the late 1990's. On January 8, 1889, the era of automated financial/management business data processing method patents was born. United States patents 395,781; 395,782; and 395,783 were granted to inventor-entrepreneur Herman Hollerith on that date.⁵ See Appendix B for Mr. Hollerith's Patents. Mr. Hollerith's method and apparatus patents automated the tabulating and compiling of statistical information for businesses and enterprises. They were acclaimed nationally and viewed as revolutionizing business data processing. The protection of his patents allowed his fledgling Tabulating Machine Company to succeed and thrive. In 1924, Thomas J. Watson, Sr. changed the company name to International Business Machine Corporation. Hollerith manual punch cards (IBM punch cards) and his methods for processing business data were still being used up until the birth of the personal computer era.⁶

The financial/management business data processing method patents of today are more numerous and more sophisticated than those of 1889. However, this is not a function of the business method ingenuity of our forebears. Rather, this is directly a function of high cost, low speed, and limited availability of automated data processing machines in the 1890's versus the low cost, high speed, and wide spread use of today's computers. Put another way, we invented some automated business data processing methods over the last one hundred years, but we spent the bulk of that time perfecting the automated business data processing machines upon which we will run the methods. It is only recently that data processing systems have become sufficiently developed to begin to allow us to fully tap our ingenuity in the business method arts.

The development of today's business data processing systems follows an unbroken evolutionary path back to simple manually operated mechanical registering devices that predate electrically controlled Hollerith type machines. See Appendix C - 1870 to 1905. Purely mechanical business data processing reached its zenith in the early 20th century. For about \$100 (\$2000 today), a 1909 merchant could purchase a cash register system that even now is one of the most sophisticated mechanical devices ever constructed. See

⁵ <http://www.invent.org/book/book-text/57.html> and <http://www.computer-museum.org/collections/hollerith.html>

⁶ Business Method Patents, i.e. automated financial/management business data processing method patents, were patented long before the USPTO's "Examination Guidelines for Computer-Related Inventions," 1184 Off. Gaz. Pat. Office 87 (March 26, 1996) and the decision in *State Street Bank & Trust v. Signature Financial Group, Inc.*, 149 F.3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998), cert. Denied, __U.S.__, 119 S. Ct. 851 (1999). *State Street* merely modified the test used to determine "statutory subject matter." It is important to understand that many business data processing methods were deemed statutory subject matter under the old "Business Method Exemption" test. For example, the claims in *State Street* were deemed by the USPTO to meet the statutory subject matter requirement under the old test.

Appendix D - 1906 to 1920. Unfortunately, business data processing was simplistic in even the most powerful of these totally mechanical registering systems. None were able to match the data processing power of the electrical-mechanical systems such as the Hollerith tabulator. However, manufacturing cost was a key issue and it was not until the 1930s that electrical-mechanical superseded purely mechanical in day-to-day business data processing systems. See Appendix E - 1921 to 1940.

The full arrival of electricity as a component in business data processing system was a watershed event. Electrical-mechanical devices provided far more business data processing power than their mechanical predecessors did. By the 1930s it was cost effective to build far more complex data processing systems. A pattern was set that has repeated itself in successive evolutionary steps since the 1930s. Electrical-mechanical switches were replaced by individual transistors. Individual transistors were replaced in turn by small-scale integrated circuits which were replaced by large-scale integrated circuits. Each new generation resulted in increased business data processing power and new inventions. However, one key thing was not significantly improved by each of these generations. Even with the arrival of larger-scale integrated circuits, each data processing system had to be individually designed at the transistor level and hard-wired to perform the correct business data processing functions. The time from innovation through design and manufacturing to market was too long and needed to be improved. The replacement of specific function large-scale integrated circuits by software controlled microprocessors allowed this to occur and was the latest evolutionary step to bring us to the business data processing systems of today. See Appendix F - 1941-1995.

III. CLASS 705 – MODERN BUSINESS DATA PROCESSING

A. TYPE OF TECHNOLOGY

Class 705 encompasses machines and their corresponding methods for performing data processing or calculation operations, where the machine or method is utilized in the 1) practice, administration, or management of an enterprise, or 2) processing of financial data, or 3) determination of the charge for goods or services. This is the formal definition of the subject matter classified in Class 705. See Appendix G for a sample of patents issued on May 30, 2000.

In layman's terms, Class 705 is a collection of 20+ financial and management data processing areas. These including data processing in specific enterprises such as Insurance, Stock/Bond Trading, Health Care Management, Reservation Systems, Postage Meter Systems (Computerized) as well as more general enterprise functions such as Electronic Shopping, Auction Systems, and Business Cryptography. The four largest groupings in Class 705 are those directed to the general business operations of:

- 1) Determining Who Your Customers Are, and The Products/Services They Need/Want
Operations Research - Market Analysis
- 2) Informing Customers You Exist, Showing Them Your Products & Services, and Getting Them to Purchase
Advertising Management
Catalog Systems
Incentive Programs
Redemption of Coupons
- 3) Exchanging Money and Credit Before, During, and After the Business Transaction
Credit and Loan Processing
Point of Sale Systems
Billing
Funds Transfer
Banking
Clearinghouses
Tax Processing
Investment Planning
- 4) Tracking Resources, Money, And Products
Human Resource Management
Scheduling
Accounting
Inventory Monitoring

B. ENGINEERING IN SUPPORT OF BUSINESS

The systems and methods of Class 705 are directed to diverse business functions. However, a strong understanding of certain non-business fields is required to fully understand many inventions in this class. Patent applications being examined in Class 705 still strongly reflect the basic engineering that underlay each invention. Electrical and computer engineering (e.g., databases, communication systems) will continue to be a dominant feature of business data processing for generations to come. A strong electrical and computer engineering foundation is as important as a strong foundation in any of the diverse business functions.

These and other shared non-business fields allow unique patent examining flexibility across certain communications and information processing technologies. This is particularly true in technologies where large amounts of data must be stored and communicated from one location to another prior to performance of some final end function such as product sales. Patent examiners, from what appears on the surface to be diverse technologies, can readily assist each other with respect to shared non-business fields.

C. PATENT ASSIGNEES 1977-1999

Class 705 was created in 1997 from the business and cost/price sections of computer classes 395 and 364. These two sections having originally evolved from class 235 - Registers, beginning in the late 1960's. The evolution of the technologies in Class 705 can be seen by reviewing the assignees of Business Methods in the three periods 1977-1989, 1990-1994, and 1995-1999.

Ranking	1977-1989 (13 year span)		1990-1994 (5 year span)		1995-1999 (5 year span)	
1	Pitney-Bowes	134	Pitney-Bowes	47	Pitney-Bowes	77
2	Sharp Corporation	39	IBM	32	*Fujitsu LTD	64
3	Omron Electronics	31	Hitachi	23	IBM	58
4	IBM	26	Sharp	11	NCR	30
5	Casio	21	Omron	9	Hitachi	27
6	Tokyo Electric	21	*Alcatel Business System	9	*Citibank	22
7	Hitachi	10	NCR	6	*EDS	21
8	NCR	7	*AT&T	6	*Microsoft	20
9	Toshiba	6	*Unisys	6	* Neopost	16
10	Merrill Lynch	5	Casio	5	*Matsushita Electric Industrial	16
	Attalla Technovations	5	* Frama A.G.	5		

* indicates a new assignee from previous period

In the period prior to 1990, the Business Methods patents were heavily focused on computerized postage metering and cash register systems. By the end of 1994 heavier emphasis was placed on financial transaction systems which moved postage metering to the second place category. By the end of 1999, electronic shopping and financial transaction systems were the two dominant categories moving postage metering systems down to third. A review of the newly filed applications shows that postage metering will be moved to the fourth spot by the emerging technology of advertising management systems.

D. PATENT APPLICATION FILINGS

Class 705 has seen strong filing growth in FY 1998 and FY 1999. However, it represented only about 1% of the total patent applications filed at the USPTO in FY 1999. The 2658 applications filed in Class 705 did not even place it among the top five Communication and Information Processing technologies.

The digital and multiplex communication technologies of Classes 370 and 375 which form the backbone of all modern communication systems saw 7131 patent applications in FY 1999. Class 345 - Display data processing (e.g., graphical user interfaces, web browsers) saw 3898 applications; Class 455 - Telecommunications (e.g., radio, cellular telephones) saw 3480 applications; Class 709 - Networked computer data processing saw 3190 applications; Class 707 - Databases and Word Processors saw 3068 applications; and Classes 360 and 369 - Dynamic Information Storage (e.g., disk drives) saw 2905 applications.

Collectively the communications and information technologies saw 57,000 applications in FY 1999. Class 705 received less than 5 % of that total.

IV. RESOURCES IN TRANSITION

A component of addressing the needs of an emerging technology is expansion of available resources commensurate in scope to the expansion of the technology. This is particularly true in the people resource intensive profession of patent examining. Additional resources can only help the Office to continue to meet its statutory mandates. The key resource is the patent examiner who is supported by the other resources of the USPTO.

A. PATENT EXAMINERS

1. Primary And Non-Primary Patent Examiners

Patent examining is a profession learned through 5 to 7 years of on the job training reinforced by classroom training. It is analogous to the master-apprentice system. Primary Examiners and their managers are the Office's master patent professionals. These master professionals are delegated signatory authority from the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office to grant patents for the United States. Non-Primary patent examiners are the Office's apprentices in the process of learning their profession. All work by a non-Primary Examiner must be reviewed and signed by a person with signatory authority. Class 705 began Fiscal 1998 with three Primary Examiners and nine non-Primary Examiners.

Patent examiners are the key resource of Class 705. Critical to the managed growth of this technology is an adequate supply of this key resource.

2. Internal Transfers

The first step in expanding the examining resources available to Class 705 was to find individuals with appropriate backgrounds among the current examining corps. Since late 1997, a number of Examiners volunteered to transfer to Class 705. This group included several electrical engineers each with a Masters of Business Administration, an examiner with banking management experience, and a Ph.D. in Information Science with 30 years work experience developing business information systems.

B. HIRING

2000 Hiring - Preparation for Transition

Workgroup 2760 will hire sufficient Class 705 examiners in FY 2000 to cover attrition and modest expansion. However, expansion of the number of Class 705 examiners will not be the primary focus for this year.

Class 705 is in the first stage of a transition period. In 1998, the State Street decision triggered an awareness of the “business method claim” as a viable form of patent protection. As noted in Section II above, such patents express the practical application (useful, concrete and tangible result) of technology that is the essence of an innovation. This segment of Class 705 is transitioning away from technology towards the end result the inventor is attempting to achieve with that technology. Inventors are changing the approach to how they choose to describe their inventions. This change is in turn driving a shift in the knowledge base of the Class 705 examiners.

However, it must be noted that most patent applications being examined in Class 705 still strongly reflect the implementing or enabling engineering (see Section III B) used to carryout the practical application being claimed. Databases, communication systems, circuits, and wires (i.e. electrical and computer engineering) will continue to be a dominant feature of business data processing for generations to come. A business data processing method is implemented on a data processing machine which is still reflected in the patent application. The USPTO will also continue to grant patent protection for the business data processing machine itself. See Appendix G for a sample of patents issued on May 30, 2000.

In FY 2000, the focus for Class 705 is to ensure that high quality is maintained by its examiners as this transition moves forward. Numerous quality efforts are being implemented as discussed below. Such quality efforts are resource intensive. The collective result of these efforts will be proportional to the USPTO’s ability to marshal the needed resources.

C. RESULTS TO DATE

1. Profile - An Appropriate Balance

Today thirty-eight examiners work in Class 705. This is an increase from twelve in late 1997. The total number, knowledge, and experience pool has been increased. Seventeen of the 38 examiners have advanced or multiple degrees. Of these 4 have an MBA or other business degrees, 4 have a JD degree, 4 have Ph.D. degrees, and 7 have Masters Degrees.

Every examiner in Class 705 has data processing and computer education or experience. The majority of examination in Class 705 is still centered on the data processing and computer technologies used to perform business functions. See Appendix G.

For over 100 years the USPTO has maintained quality by adapting its knowledge base continuously as business technologies have evolved. It has adjusted the mix of training and experience of its examiners. The USPTO will continue to maintain an appropriate mix of electrical engineering, computer science, and business knowledge balanced to the contents of the business data processing inventions it is asked to examine.

2. Business Industry Experience - Shifting the Knowledge Base

The patent applications of Class 705 have begun a transition to become more business function focused. Although still present in these patent applications, implementing technologies such as databases, communication systems, and circuits are becoming less prominent. However, as was previously discussed, this transition has only begun. As this transition continues the USPTO is appropriately responding by increasing examiner training and hiring, particularly by increasing the number of examiners with 3 years of business industry work experience.

Fourteen (14) patent examiners working in Class 705 have business industry work experience that pertains directly to the examination of patent applications in Class 705. Of these, ten have three or more years of work experience in various fields including Banking, Securities, Business Development, Marketing Analysis, Real Estate Analysis, Business Consulting, Management, Sales, Insurance, Business Information Systems, and Financial Analysis. This is 26% of the current Class 705 examiners. The combined business industry work experience of these 14 examiners is over 120 years.

Resources must be made available to continue to attract and retain greater numbers of these skilled experts. Without sufficient resources to continue both training and hiring, it is possible that as business data processing inventions continue to evolve the USPTO knowledge base will not keep pace with that change.

D. SCIENTIFIC & TECHNICAL INFORMATION CENTER – ELECTRONIC INFORMATION CENTER (STIC – EIC)

Patent examining in Class 705 is filled with challenges. This class contains diverse business topics (e.g. insurance and inventory systems). Prior art references can be found in many diverse sources (e.g. an Internet web site, a sales brochure, or a 120-year-old textbook). There is poor tabulation of all the available references for a particular topic (e.g. not all the insurance prior art is found in one location).

The STIC – EIC provides search and library support to help examiners meet these challenges. The professional searchers of the EIC routinely perform non-patent literature (NPL) searches requested by Class 705 examiners. The number of EIC professional searchers has expanded from two in 1995 to twelve in FY 2000. Although the EIC provides searching for all 703 examiners in Technology Center 2700, requests from the Class 705 examiners represented their largest technology specific group of search requests during FY 1998 and FY 1999. In the first half of FY 2000, this trend continued.

Among the library support functions currently being performed by the EIC are the locating of additional electronic business literature sources; the continued expansion of a conventional library of business books; and the retrieval of hard copies of pertinent NPL documents requested by examiners.

STIC is currently working on an initiative to collate examining resources into a web-based tool for Class 705 examiners. This tool will connect with databases, web sites, electronic and print literature resources on Class 705 topics.

V. IMPROVING QUALITY

A. INTRODUCTION

It is universally agreed that high quality examination by USPTO Patent Examiners must be ensured. Quality initiatives are continuously updated. The detailed discussion below highlights initiatives in place prior to March 2000, as well as, quality initiatives announced in March by Q. Todd Dickinson, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office. Each new quality initiative follows the pre-March 2000 initiative discussion it relates to most closely.

The mission of the USPTO is to help our customers get patents. However, not all applications are patentable. The patent examiner is tasked with helping the inventor including pointing out patentable inventions disclosed but not claimed in the originally presented claims. The examiner is also tasked with analyzing the scope of the claims and determining if sufficient evidence exists to meet the burden of proof to deny the granting of a patent on some or all of the presented claims. The patent statute is quite specific: "A person shall be entitled to a patent unless" this burden of proof is met. In Class 705, the examiners are able to grant patents on presented claim(s) about 57% of the time.

B. HYBRID EXAMINER-TRAINER

To assist first-line supervisors with training and review of work, Workgroup 2760 is using Examiner-Trainers in the Class 705 arts to promote consistent examination. An Examiner-Trainer is a Primary Examiner that spends 50% of the time examining patent applications, and 50% of the time training others in legal, procedural, and technological aspects of patent examining. On each application they examine, the new examiners work extremely closely with the Examiner-Trainers learning patent examining practice and procedure. In this way, the workgroup was able to properly train and integrate all their new hires in Fiscal Years 1999 and 2000.

C. TRAINING

1. Procedural

All examiners receive legal, procedural and technical training throughout their career at the USPTO.

When first hired, patent examiners undergo two weeks of intensive training in patent examining procedure. Here, the new employees learn the various statutes (35 USC) and rules (37 CFR) that govern the patent system. Using generic examples and lectures, they also learn how to properly examine an application and provide feedback (in the form of an Action) to the applicant. Upon successful completion of this course, the new examiners are released to the art units/workgroups for further training.

Upon their arrival in Workgroup 2760, the new Class 705 examiners learn of the policies and procedures of Workgroup 2760 and Technology Center 2700. Their orientation covers the workgroup training manual (to be discussed later in this paper), administrative procedures of the workgroup and of the technology center, and a discussion of training opportunities available.

Within the first month, new examiners are also trained on the various electronic and computerized systems used within the USPTO for searching, preparing actions, and tracking workflow. Either the workgroup or the technology center provides most of this training.

After approximately 2 months on the job, the new Class 705 examiners attend two more weeks of intensive training (called Introduction to Practice and Procedure - IPP) where they learn more aspects of searching and writing actions. Managers from the Technology Center teach the IPP course. These examiners receive training in the computer arts as they examine their own application.

Following the two week long IPP course, the new examiners begin attending weekly courses on advanced practice and procedure. Topics include affidavit practice, Patent Cooperation Treaty (PCT) procedures, and 35 U.S.C. 101 training.

2. Workgroup 2760 Training Manual

Typically, a new examiner works side by side with an experienced examiner (called a Primary Examiner) learning how to analyze an application, search the invention, and provide feedback to the applicant in the form of a written Action. In Workgroup 2760, to provide more guidance for the examiner, the managers working in cooperation with the Primary Examiners developed a training manual for the workgroup. The initial chapters of the manual focus on three critical steps: analyzing the disclosure and claims, searching for the invention, and preparing a written report (office action) to be sent to the inventor.

The intent of the training manual is to bring the new examiner up to speed with the basics of examining within 6 months. The manual also ensures that all examiners, new and experienced, are consistent in the manner they examine patent applications. The manual contains over 100 pages directed to analyzing the specification, searching, writing the action, handling amendments, responding to amendments, and samples of each. The manual is distributed to each new examiner within days of their entry into the workgroup. The Examiner Trainers provide an orientation for the new examiners and among other activities, acquaint the new examiner to the training manual. Over the two years since its introduction to the examiners, the 2760 training manual has been used to assist in the apprentice training of new business patent examiners.

3. Search Strategy Training

A proper search is the mainstay of the U.S. Patent system. It usually takes years of training to fully develop the skills required to ascertain a proper search strategy after analyzing an application. The examiner must be trained in the art of analyzing the scope of the claims and searching. With this in mind, the managers and Primary Examiners of Workgroup 2760 have formulated standardized base search strategies for the varying aspects of the business technology. Thus, once an examiner knows the technology and concepts cited in the application, the examiner can utilize the standardized search strategy to determine not only where to search in the U.S. Patent system, but also which data files to search in Dialog and/or STN. While each application is unique and requires individual attention, these strategies assist a patent examiner, new or experienced, in searching the appropriate areas and finding references relevant to the application at hand.

To further assist the Class 705 examiners, a search strategy advisory panel comprised of managers and experienced examiners has been established to assist all Class 705 examiners in developing a search strategy for the application under examination. This panel may also be used to provide legal and procedural assistance.

4. Commercial and NPL Databases

During the first month of an examiner's career, and as new systems are introduced, the USPTO through the Patent Academy teach examiners how to search the U.S. patent databases (known as EAST and WEST). Commercial databases, searched by Class 705 examiners, provide "non-patent literature" (NPL) documents such as professional journals, magazines, and conference proceedings. Some commercial databases also offer abstracts of foreign documents.

Workgroup 2760, with the support of the Technology Center and the USPTO Academy, provides both basic and advanced training to the Class 705 examiners in DIALOG and STN/CAS. These courses utilize specific examples compiled by the workgroup managers and the Examiner Trainers so the trainees are searching "real world" situations during their training.

If examiners do not wish to search the commercial databases themselves, they can request a commercial database search by the Electronic Information Center (EIC) – a branch of the USPTO's Scientific and Technological Center (STIC) supported by Technology Center 2700. The EIC staff includes 12 professional searchers who perform the searches for these examiners. One searcher also collects new and interesting business information (including web sites) and provides them to the Class 705 examiners in a daily e-mail newsletter.

Non-patent literature (NPL) encompasses a wide variety of diverse published materials, such as textbooks, newspaper articles, magazine articles, sales brochures, professional journals, and conference proceedings. A patent examiner can find patented art in the U.S. Patent database for many business technologies. However, for rapidly emerging technologies, and/or simple accounting procedures, the U.S. Patent database is of less value. The Class 705 examiner will rely on NPL to provide the relevant art in these situations.

Begun in 1994, the EIC of Technology Center 2700 has worked hard to more readily provide NPL to the examiner. To assist the patent examiner in finding relevant NPL, the USPTO provides access to scientific and business related articles in over 900 databases through two commercial NPL database providers –

1. DIALOG
2. STN/CAS

All Class 705 examiners receive training in one or more of these two commercial database providers. The training is taught in two parts. The first part is an orientation into how the database operates, and how to establish a simple search query. The second part of the course is hands on with specific examples related to the business arts.

5. March 2000 Initiatives on Searching

Examiners perform a mandatory search for all applications in Class 705 to include a classified U.S. patent document search, and a text search of U.S. patent documents, foreign patent documents, and non-patent literature (NPL). The NPL searches include required search areas mapped/correlated to the U.S. classification system for Class 705.

For example, if an examiner is searching an insurance patent application classified in class 705/4, the examiner would have to search the 22 mandatory general business databases as well as the 3 mandatory databases specific to insurance. See figures NPL-1 to NPL-4 for a listing of class 705 core databases.

In addition to these mandatory databases, the examiner would search all appropriate databases from among the 900 available databases (e.g. Software Patent Institute [SPI], IEEE/IEE Electronic Library [IEL Online], etc.).

CLASS 705 CORE DATABASES

Non-Patent Literature Core Databases

All Class 705 applications will be searched in the following databases:

ABI/INFORM® [Bell & Howell Information and Learning]
Business & Industry™ [Responsive Database Services, Inc.]
Business Week [The McGraw-Hill Companies Publications Online]
Business Wire [Business Wire]
Computer Database™ [The Gale Group]
Conference Papers Index [Cambridge Scientific Abstracts]
Dissertation Abstracts Online [Bell & Howell Information and Learning]
Globalbase™ [The Gale Group]
Inside Conferences [The British Library]
INSPEC [INSPEC, Inc.]
Internet & Personal Computing Abstracts® [Information Today, Inc.]
The McGraw-Hill Companies Publications Online [The McGraw-Hill Companies, Inc.]
Microcomputer Software Guide Online® [R. R. Bowker Company]
New Product Announcements /Plus® (NPA/Plus) [The Gale Group]
Newsletter Database™ [The Gale Group]
Newspapers

- *Financial Times Abstracts*
- *New York Times Abstracts*
- *San Jose Mercury News*
- *Wall Street Journal Abstracts*

PR Newswire [PR Newswire Association, Inc.]
PROMT® [The Gale Group]
Softbase: Reviews, Companies, and Products [Information Sources, Inc.]
Trade & Industry Database™ [The Gale Group] *Wilson Applied Science and Technology Abstracts* [The H.W. Wilson Company]
World Reporter [The Dialog Corporation, Dow Jones & Company, and Financial Times Information]

Figure NPL-1

Subject Specific Databases

Many databases contain significant non-patent literature resources relevant to specific Class 705 subclasses. Therefore, additional core databases are listed for the subclasses indicated in this section. Examiners are required to search these databases during the examination of cases classified under these subclasses. In this list, the subclass numbers have been listed to the left of the subclass description.

2 Health Care Management

In addition to Core databases, search:

American Medical Association Journals [The American Medical Association]

BIOSIS Previews® [BIOSIS®]

EMBASE® [Elsevier Science, B.V.]

*Health & Wellness Database*SM [The Gale Group]

Health News Daily [F-D-C Reports, Inc.]

HealthSTAR® [U.S. National Library of Medicine (NLM)]

MEDLINE® [U.S. National Library of Medicine (NLM)]

New England Journal of Medicine [Massachusetts Medical Society]

SciSearch® [Institute for Scientific Information® (ISI®)]

If drugs/pharmaceuticals are involved. . . .

Drug News & Perspectives [Prous Science Publishers]

International Pharmaceutical Abstracts [American Society of Health-System Pharmacists]

Pharmaceutical and Healthcare Industry News Database [PJB Publications Ltd.]

Pharmaceutical News Index (PNI)® [Bell & Howell Information and Learning]

4 Insurance

In addition to Core databases, search:

American Banker Financial Publications [American Banker-Bond Buyer]

Insurance Periodicals Index [NILES Publishing Company]

The Journal of Commerce [The Journal of Commerce, Inc.]

7 Operations Research

In addition to Core databases, search:

Inventory Monitoring Databases

Figure NPL-2

13 Transportation Facility Access

In addition to Core databases, search:

Aerospace/Defense Markets & Technology® [The Gale Group]

Aerospace Database [AEROPLUS ACCESS]

The Journal of Commerce [The Journal of Commerce, Inc.]

NTIS - National Technical Information Service [National Technical
Information Service, U.S. Department of Commerce]

Transportation Research Information Services [Transportation Research
Board]

14 Advertising/Coupon Redemption/Incentives

In addition to Core databases, search:

Business Dateline® [Bell & Howell Information and Learning]

Marketing & Advertising Reference Service® [The Gale Group]

Newspapers

The Atlanta Journal/The Atlanta Constitution

The Arizona Republic/The Phoenix Gazette (Phoenix)

The Sun (Baltimore)

The Boston Globe

Chicago Tribune

The Christian Science Monitor

Detroit Free Press

The Denver Post

Houston Chronicle

Independent (London)

The Irish Times

Los Angeles Times

The Miami Herald

Newsday and New York Newsday

The Oregonian (Portland)

The Plain Dealer (Cleveland)

The Philadelphia Inquirer

Rocky Mountain News (Denver)

San Francisco Chronicle

St. Louis Post-Dispatch

St. Petersburg Times

Times/Sunday Times (London)

USA Today

Washington Post Online

Figure NPL-3

- 26 **Electronic Shopping**
 In addition to Core databases, search:
 Advertising/Coupon Redemption/Incentives Databases
 Magazine Database™ [The Gale Group]

- 28 **Inventory Monitoring**
 In addition to Core databases, search:
 Ei Compendex® [Engineering Information, Inc.]
 ISMEC: Mechanical Engineering Abstracts [Cambridge Scientific
 Abstracts]
 JICST-EPlus - Japanese Science & Technology [Japan Information
 Center for Science and Technology (JICST)]
 NTIS: National Technical Information Service [National Technical
 Information Service, U.S. Department of Commerce]
 SciSearch® [Institute for Scientific Information (ISI®)]
 Social SciSearch® [Institute for Scientific Information (ISI®)]

- 35 **Banking/Finance/Investments**
 In addition to Core databases, search:
 American Banker Financial Publications [American Banker-Bond Buyer]
 Banking Information Source [Bell & Howell Information and Learning]
 Bond Buyer Full Text [American Banker-Bond Buyer]
 DIALOG Finance and Banking Newsletters [The Dialog Corporation]
 EconLit [American Economic Association]

- 36 **Portfolio Selection**
 In addition to Core databases, search:
 Banking/Finance/Investment Databases

- 37 **Trading, Matching or Bidding**
 In addition to Core databases, search:
 Banking/Finance/Investment Databases

- 38 **Credit Processing or Loan Processing**
 In addition to Core databases, search:
 Banking/Finance/Investment Databases

- 39 **Including Funds Transfer or Credit Transaction**
 In addition to Core databases, search:
 Banking/Finance/Investment Databases
 Knight-Ridder/Tribune Business News™ [Knight-Ridder/Tribune
 Business News]

Figure NPL-4

6. Technical

The patent examiner's training does not end with procedural training. The workgroup also provides technical training to both the new and the experienced Class 705 examiner. In keeping with the latest trends in "electronic business practice", the Class 705 examiners have received training over the last two years in – Computer networking, Computer organization and architecture, Electronic Payments, Electronic Catalogs, and Computer Security

Courses in the planning stage for the year 2000 include –

1. Advanced Computer Networking
2. Financial Transaction (including ATM)
3. Smart Cards
4. General Accounting Procedures

The intent of the technical training course is to provide the examiners with current information in the various fields of endeavor, and the history of that field. In this way, every Class 705 patent examiner has the same baseline of knowledge regardless of previous training or course work.

7. Field Trips, Conferences, and Seminars

Field trips to industry are important to the examining process as such trips give the examiner first hand knowledge of the inventive process and augment technological knowledge and expertise. Such trips also enable the examiner to sit down with the inventors to see the patent process through the eyes of the customer. Field trips also enable the examiner to understand the efforts put into the inventive process and the application process by the applicant. Workgroup 2760 is planning a business field trip during the summer of 2000 to Wall Street.

Conferences and seminars are important to the examining process as they provide tutorials and information on new technology and processes. In November of 2000, Workgroup 2760 is planning to send a contingent of Class 705 examiners to New York City to the Financial Tech Conference, which covers technologies used in insurance, banking and Wall Street.

8. March 2000 Initiatives on Training

Workgroup 2760 will maintain technical currency for examiners and continue current training efforts/partnerships with industry associations and various individual corporate sponsors.

Business practice specialists will be pursued from industry to serve as a resource for examiners on common or well known industry practices, terminology, scope and meaning, and industry standards in four basic areas: banking/finance, general e-commerce, insurance, and Internet infrastructure.

The USPTO will publish the areas of training needs for public comment and outside offers to provide such training.

D. MARCH 2000 INITIATIVES FOR ADDITIONAL REVIEW

A new second-level review of all allowed applications in Class 705 is required to ensure compliance with the mandatory search requirements, clarity and completeness of reasons for allowance, and to determine whether the scope of the claims should be reconsidered.

The sampling size for quality review by the Office of Patent Quality Review is being substantially expanded for Class 705.

The Examination Guidelines for Computer-Related Inventions and the relevant training examples are being revised in light of the *State Street Bank* and *AT&T v. Excel* decisions.

E. MEASURE OF QUALITY EFFORTS

The value of the quality initiatives is dependent upon associated measurement systems. Workgroup 2760 has two measuring components in place to measure their quality and the effectiveness of any initiatives implemented.

In-Process Review

Since 1998, Workgroup 2760, as well as TC 2700, have been performing in-process reviews of applications after a first office action to assist them in determining areas for quality improvement within the business area. These reviews check numerous items in the office actions but have a particular emphasis on the field of search of the prior art and patentability determinations under 35 U.S.C. 102 and 103. The data from each of these in-process reviews is compiled and provided to the workgroup managers. Results from these reviews are used to determine areas for improvement in application prosecution. Over the past two years, several areas have been identified and addressed with appropriate training by the Tech Center Quality Assurance Specialist (QAS).

VI. CUSTOMER PARTNERSHIP

In 1999, Technology Center 2700 and Workgroup 2760 began customer outreach initiatives and the formation of customer partnerships directed to Class 705.

On October 26, 1999, a *Customer Focus Session on Quality of USPTO Prior Art Searches in the Business Method Area* was held to identify strengths and weaknesses in the quality of searches being completed at the USPTO. This session included officials of the USPTO and a number of patent practitioners from the East Coast. Valuable information was received from customers that will be utilized in crafting initiatives to improve performance.

Technology Center 2700 has begun the process of forming customer partnerships to jointly address the issues of examination in Class 705. These customer partnerships will be a key mechanism in continuing to properly address the patent examination impacts of business data processing. Customer partnerships will allow the USPTO to properly gauge numerous items. Customers of the USPTO will know first the future evolution of business data processing. Their application filings will control the transition of patent application format towards the “business method form” and any future shift that will be required in the knowledge base of Class 705 examiners. They are also in a unique position to assist in providing training needed as part of shifting the knowledge base.

VII. CONCLUSION

The growth of the business technology industry has been reflected in the increase in the quantity and complexity of patent applications filed in Class 705. This paper has discussed many initiatives that have been implemented to improve quality and begin customer partnerships for Class 705. More will be required in the future to meet the needs of this emerging technology and the needs of our customers. The USPTO management is committed to the successful examination of these applications to ensure continued growth and innovation in this important area.

APPENDIX A

Patent Number	Issue Date	Inventor	Title
X2301	April 28, 1815	Kneas	Bank Note Printing *Note this is a restored Patent taken from court records
871	August 3, 1838	Watson	Bank Note
63889	April 16, 1857	Hawes	Hotel-Register
138,891	May 13, 1873	Hunter	Revenue Stamps
575,731	January 26, 1897	Powers et al.	Insurable Property Chart
853,852	May 14, 1907	Adams	Insurance System
1,406,561	February 14, 1922	Howard	Business Form
3,556,563	July 9, 1969	Scheinberg et al.	Booklet and Cards For Use In A Limited Credit System

APPENDIX B

Patent Number	Issue Date	Inventor	Title
395,781	January 8, 1889	Hollerith	Art of Compiling Statistics
395,782	January 8, 1889	Hollerith	Art of Compiling Statistics
395,783	January 8, 1889	Hollerith	Art of Compiling Statistics

APPENDIX C

Patent Number	Issue Date	Inventor	Title
209,827	November 12, 1878	Moss et	Ticket Printing and Recording-Machine
774,322	November 8, 1904	Hepfer	Profit Sharing Sales Counter

APPENDIX D

Patent Number	Issue Date	Inventor		Title
915,090	March 16, 1909	Fuller		Cash Register
920,110	May 4, 1909	Cleal et al.		Cash Register

APPENDIX E

Patent Number	Issue Date	Inventor	Title
1,710,691	April 30, 1929	Carroll	Combined Sorter and Tabulator
2,052,444	August 25, 1936	Breitling	Bookkeeping Machine
2,126,615	August 9, 1938	Campbell	Accounting Machine

APPENDIX F

Patent Number	Issue Date	Inventor	Title
2,594,865	April 29, 1952	Bumstead	System for Making Reservations
2,916,212	December 8, 1959	Yoshiharu Mita	Electro-Analog Model Equipment of National Economic System
3,017,103	January 16, 1962	Goldberg et al.	Service Charge Calculation System
3,018,050	January 23, 1962	Barrell	Economic Data Computer
3,638,003	January 25, 1972	Meixner	Credit-Accumulating Arrangement
4,365,314	December 21, 1982	Badagnani et al.	Electronic Accounting Machine With Split Display
5,058,009	October 15, 1991	Yoshino et al.	Financial Calculator for Calculating, Graphically Displaying and Confirming Results of Loan Amortization Calculation

APPENDIX G

Patent Number	Issue Date	Inventor	Title
6,070,147	May 30, 2000	Harms et al.	Customer Identification and Marketing Analysis Systems
6,070,148	May 30, 2000	Mori et al.	Electronic Commerce System and Method for Providing Commercial Information in Electronic Commerce System
6,070,149	May 30, 2000	Tavor et al.	Virtual Sales Personnel